

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
TRADEMARK TRIAL AND APPEAL BOARD

Trumpf GmbH + Co. KG

Application for Trademark Filed October 25, 2005

Trademark TRUWELD

Serial No. 79/021,358

Law Office 115

APPELLANT S' BRIEF



09-07-2007

TABLE OF CONTENTS

	<u>Page</u>
INDEX OF CASES	3
DESCRIPTION OF THE RECORD	4
STATEMENT OF ISSUES	5
RECITATION OF THE FACTS	6
ARGUMENT	8
SUMMARY	12
APPENDIX A	13
APPENDIX B	14

INDEX OF CASES

Alliance Technical Services, Inc. v. Alliance Machine Systems
International, Inc. – 2006 TTAB LEXIS 370 (TTAB 2002)

Astra Pharmaceutical Products, Inc. v. Beckman Instruments, Inc.
718 F.2d 1201 (1ST Cir. 1983)

In re Digirad Corp.
45 U.S.P.Q.2d (BNA) 1841, 1998 WL 104305 (TTAB 1998)

Electronic Design & Sales, Inc. v. Electronic Data Systems Corporation
954 F.2d 713 (Fed. Cir. 1992)

In re National Data Corp.
753 F.2d 1056, 1058, 224 U.S.P.Q. 749, 750-751 (Fed. Cir. 1985)

DESCRIPTION OF THE RECORD

The present application is based upon an application filed in Germany under the Madrid Convention.

The United States Patent and Trademark Office issued a partial provisional refusal of registration based upon objections to the description of the goods and likelihood of confusion with respect to a prior registration of TRU-WELD.

Applicant filed a response in which it amended the description of the goods in International Classes 7 and 9, and argued against the refusal thereof based upon likelihood of confusion. In addition, Applicant requested a division into a separate application of the services in International Classes 37, 40 and 42 which has issued as Registration No. 3,265,403.

The Examiner then entered a final refusal based upon the likelihood of confusion.

Applicant concurrently filed a notice of appeal and a request for reconsideration. The Examiner was not persuaded by the request for reconsideration and maintained the refusal of registration. Applicant was given a period of 60 days from the date of notification in which to file this brief.

STATEMENT OF ISSUES

Whether the purchasers of Applicant's laser welding machines and lasers would be confused by the concurrent use of the prior registrant's usage for fastening devices including welding studs and shear connectors.

Whether the sophistication of the purchasers of the products of the parties would be sufficient to preclude likelihood of confusion.

Whether the absence of competition between the goods of the prior registrant and the goods of the present application, makes it unlikely that there would be any confusion.

RECITATION OF THE FACTS

Applicant is a German company which adopted the mark TRUWELD and filed an application for registration based upon the Madrid Convention. Applicant's goods are sold in the United States by Trumpf Inc., a wholly owned subsidiary.

Applicant makes and markets the following goods:

INDUSTRIAL MACHINE TOOLS FOR WELDING WORKPIECES
USING A LASER BEAM in International Class 7.

LASERS, NOT FOR MEDICAL PURPOSES, IN PARTICULAR
FORM THE WELDING AND TREATMENT OF WORKPIECES in
International Class 9.

A copy of Applicant's literature was provided to the Examiner and it shows the sophisticated and complex machine tools. Associated with the illustrated machines are laser beam generators or resonators. Cables and light guides are provided to deliver the beam to the welding head. See Appendix A.

The prior registrant's goods are described as:

FASTENING DEVICES INCLUDING WELDING STUDS AND
SHEAR CONNECTORS in International Class 6.

Literature from its website is appended as Appendix B.

Applicant's goods are utilized in factories and may be used for processing large sheet metal workpieces in which a laser beam is directed at an interface between two components, and the laser beam raises the temperature of the abutting surfaces until it melts so that the two workpiece components to be securely bonded. The machines

involved may employ work tables in which there is relative movement of the workpiece, and the laser welding head. Others may involve computer operated robots.

Thus, Applicant's goods are to be found in factories where parts are being welded together. T prior registrant's goods are to be found on construction sites and for the specific purpose of providing fasteners for use in securing the metal framework of buildings, bridges and other structures.

In contrast, the goods of the prior registrant are fasteners, particularly welding studs which are bonded to a workpiece which will generally be I-beams, H-beams and other structural members. This welding is conveniently and usually performed on the site and in most instances with the structural member in place.

The United States Patent and Trademark Office issued a provisional refusal in which the Examiner sought a revision of the description of the goods.

Applicant filed a response in which the description of the goods in Classes 7 and 9 was revised. Applicant filed a divisional application as to services in Classes 37, 40 and 42. Applicant argued that there was no real likelihood of confusion because of the different nature of the goods and the sophistication of the marketplace.

The Examiner then made final the refusal of registration.

ARGUMENT

It is respectfully submitted that there is no real likelihood of confusion by the contemporaneous use of TRU-WELD for the prior registrant's goods and TRUWELD for Applicant's goods.

A comparison of the goods described in the prior registration and those described in the present application will establish that there is no overlap and no competition.

The Applicant's goods are industrial machine tools for welding workpieces using a laser beam in International Class 7; and lasers, not for medical purposes, in particular for the welding and treatment of workpieces, in International Class 9.

The goods of the prior registrant are fasteners, particularly welding studs which are bonded to a workpiece, and classified in International Class 6 for metal goods.

As stated in *In re National Data Corp.*, 753 F.2d 1056, 1058, 224 U.S.P.Q. 749, 750-51 (Fed. Cir. 1985):

There is no mechanical test for determining likelihood of confusion. The issue is not whether the actual goods are likely to be confused but, rather, whether there is a likelihood of confusion as to the *source* of the goods. *In re Shell Oil Co.*, 992 F.2d 1204, 1208, 26 USPQ2d 1687, 1690 (Fed. Cir. 1993), and cases cited therein. Each case must be decided on its own facts.

Applicant concedes that the marks are nearly identical, but strongly disagrees that there would be any source confusion.

The purchasers of the goods of the prior registrant and of those of Applicant are discerning and discriminating buyers who would recognize that the respective goods come from different sources. These purchasers would not look to purchase Applicant's goods and those of the prior registrant from the same source.

Applicant's "purchasers" comprise sophisticated manufacturers who use sophisticated and very expensive machine tools to weld parts in assembly. The purchasing agents would recognize the differences between welding studs and shear connectors, and lasers. The purchasers of the registrant's goods buy substantial quantities of laser welding machine tools, welding studs and connectors for welding onto structural members for the framework of buildings, bridges, etc.

The Board in *Digirad* cited with approval the decision of the Court of Appeals for the First Circuit in *Astra Pharmaceutical Products, Inc. v. Beckman Instruments, Inc.*, 718 F.2d 1201, 220 USPQ 796, 790 (1st Cir. 1983), there the Court stated:

If likelihood of confusion exists, it must be based on the confusion of some relevant person; i.e., a customer or purchaser. And there is always less likelihood of confusion where goods are expensive and purchased after careful consideration.

Noting that similarity of trade channels or overlap of customers is not established simply because both parties conduct business in the same field and sell their products to the same institution, the court found the purchasing institution, a hospital, not to be the relevant purchaser as it "is composed of separate departments with diverse purchasing requirements, which, in effect,

constitute different markets for the parties' respective goods." (*Id.* At 791 [220 USPQ].) In view of the differences in markets, the level of sophistication of the purchasers and the cost of the products, the court concluded that there was "no likelihood of confusion of relevant purchasers."

The Court of Appeals for the Federal Circuit in *Electronic Design & Sales v. Electronic Systems*, 954 F.2d 713, 716 (Fed. Cir. 1992) cited *Astra* with approval stating:

Similarly, in the instant case, where both applicant's goods and opposer's services are marketed and sold in the medical and certain other fields, it is error to deny registration simply because "applicant sells some of its goods in some of the *same fields* in which opposer provides it services," *Electronic Data*, slip op. at 6 (emphasis added), without determining who are the "relevant persons" within each corporate customer. This is especially true where, as here, the Board acknowledged that "applicant's goods are specifically different and noncompetitive."

We are not concerned with mere theoretical possibilities of confusion, deception, or mistake or with de minimis situations but with the practicalities of the commercial world, with which the trademark laws deal.

There are other decisions which support the principle that various factors must be considered to establish likelihood of confusion. Recently this Board stated in *Alliance Technical Services, Inc. v. Alliance Machine Systems International, Inc.*, 2006 TTAB LEXIS 370 (TTAB 2002):

After reviewing the record, we conclude that the marketplace realities make confusion unlikely to occur. Opposer's goods and services and applicant's goods are specifically different and noncompetitive. This factor, coupled with the detailed, lengthy and personal nature of the purchasing process, the high cost of the involved goods, and the sophistication of purchasers, make it unlikely for confusion to occur. *Kellogg Co. v. Pack 'em Enterprises Inc.*, 951 F.2d 330, 21 USPQ2d 1142 (Fed. Cir. 1991) [any single factor may play a dominant role in a likelihood of confusion analysis].

SUMMARY

As succinctly stated in *Electronic Design & Sales v. Electronic Systems*, at 954

F.2d 719:

In view of the different purchasers and the differences in what each company sold, the sophistication of most purchasers, and the other factors discussed above, we hold that likelihood of confusion among relevant persons has not been proved.

Accordingly, the decision of the Examiner should be reversed, and the application passed to publication.

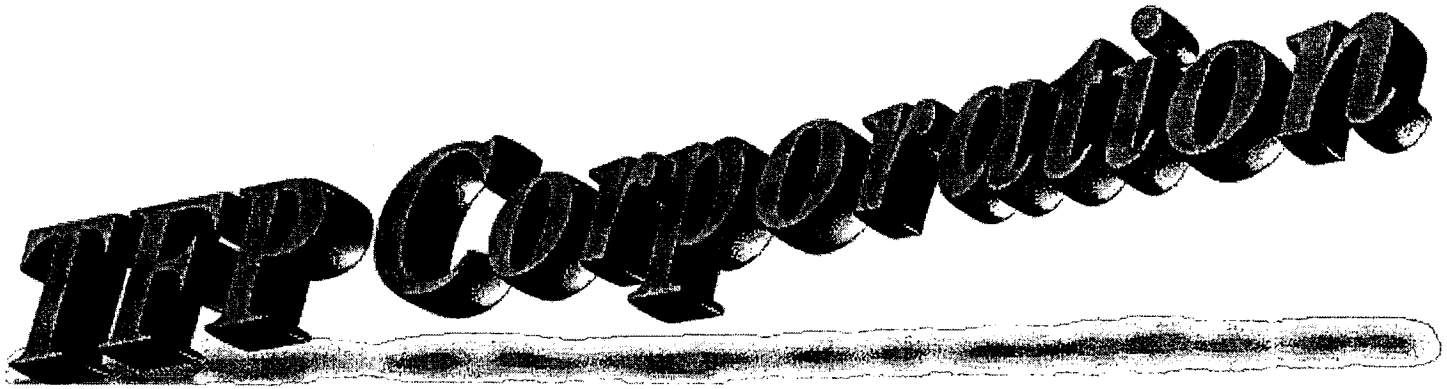
Respectfully submitted,

TRUMPF GMBH + CO. KG

By 

Peter L. Costas
Attorney for Appellant
Registration No. 18,637
(860) 241-2630

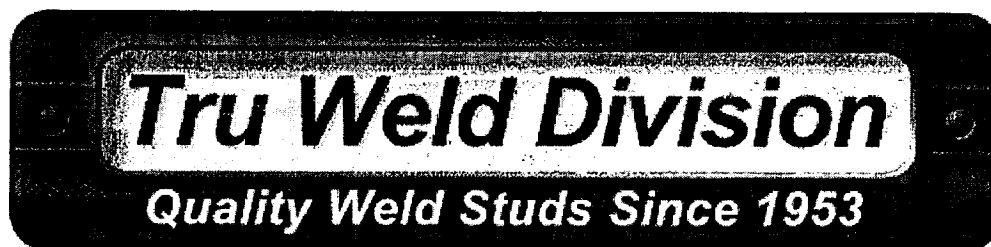
APPENDIX A



460 LAKE ROAD MEDINA OHIO 44256 330-725-7741



 fasteners@tfpcorp.com






 weldstuds@tfpcorp.com

**TRU-WELD**

A Division of TFP Corp.

Quality Weld Studs
Since 1959

Call Toll Free: 1.866.TRUWELD :: Fax 330.725.0161

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S Studs.pdf](#)
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SC Studs.pdf](#)
Welcome to The TRU-WELD Division of TFP Corporation.

Since 1959 TRU-WELD has been an industry leader of weld stud sales and manufacturing. TRU-WELD manufactures weld stud fasteners for a vast variety of applications. From the small everyday handheld tool or yard machinery to automobiles, aircrafts, bridges, ocean liners & steel structure buildings to military vehicles, weld studs are all around us in our everyday lives.

Stud Welding.

Simply stated, the process of creating a weld stud termed as "Stud Welding" is fusing of a threaded or non-threaded metal shaft or stud to a larger diameter head with a high power electrical detonation - yielding a stronger bond than if it were forged or traditionally welded.

Full Service Manufacturing

With our full in-house manufacturing facility, Heat Treating and Finishing departments, TRU-WELD will design and manufacture a weld stud to suit your specific needs and application.

Service, Quality and Competitive Pricing.

The three vital steps that make the business world go around. We believe that with uncompromised service, high quality manufacturing and competitive pricing, TRU-WELD will continue to retain our current and gain new, customers around the world. Please contact us to see if we can add you as another satisfied customer

Experience.

Since 1928 TFP Corp. has been manufacturing Cold Form Fasteners. And now 46 years later - since 1959 TRU-WELD has maintained industry leadership in weld stud sales, manufacturing and equipment.

Stud Welder Systems.

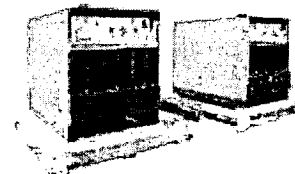
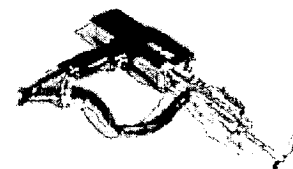
Since 1970 TRU-WELD has been selling our own line of Stud Welding Equipment. See our line of Stud Welding Equipment, Guns and Accessories.

ISO/QS Compliant, AWS D1.1, British Standard 5400 and 5950,
Canadian Welding Bureau CSA W59, ASTM A108

All of our products are tested in house before shipment

TRU-WELD Products**TRU-WELD****Stud Welders:****2005 Models
Now Available!**

TW-1200 Stud Welder
SC-2000 Stud Welder
SCD-3250 Stud Welder


 [TRU-WELD
Stud Welders.pdf](#)
TRU-WELD**Stud Welder Guns:**


HD-35
Stud Welder Gun




TW-625
Stud Welder Gun

TRU-WELD**Stud Welding Access:**

Ceramic Collars,
Holders, Legs Etc....

 **TRU-WELD**
[TP Studs.pdf](#)

 **TRUE-WELD**
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 **TRU-WELD**
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Call Toll Free: 1.866.TRU-WELD - (1.866.878.9353) :: Fax: 330.725.0161 :: [E-Mail](#)

P.O. Box 702 Medina, Ohio 44256 / 460 Lake Rd. Medina, Ohio 44256

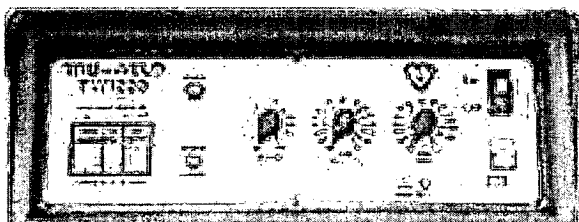
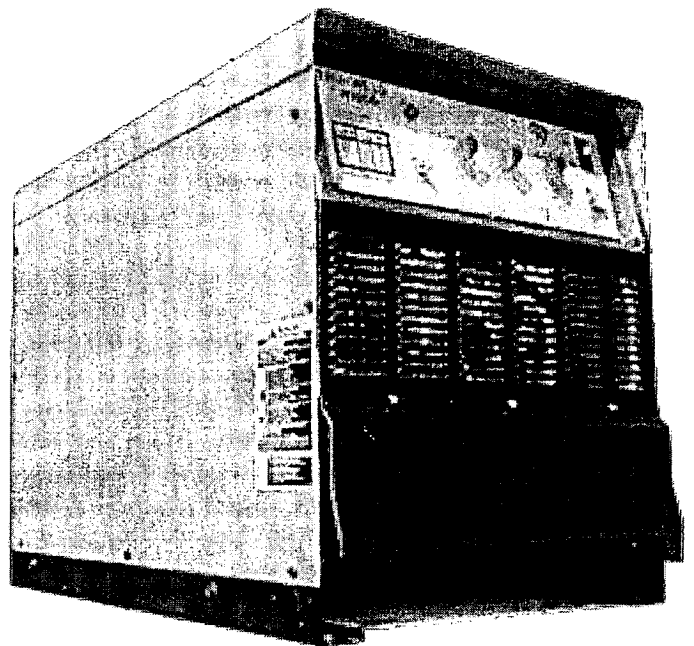
Any unauthorized duplication of corporate content and or information which is intellectual property of *TFP Corp. / TRU-WELD* provided on this website without permission, will be considered a violation of applicable laws.

TW-1200 Solid State Stud Welding System

Direct Current/Constant Current Output
Stepless Control and Current Adjustments

Built in Chuck Saver Feature

System comes complete with Solid State Power Supply, #16 A ground cable, control/weld cable, TW-625 Stud Gun AND initial Set-up accessories-chuck, foot/grip



MACHINE SPECIFICATIONS

Dimensions: 30-1/4" H X 22-3/4" W X 35-3/4" D (475# Net)
Rated Weld Output: Stud Mode - 1200 Amperes 44 Volts @ 20% Duty Cycle

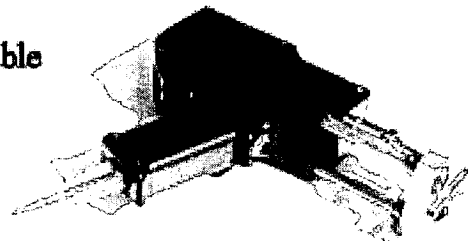
Stud Capacity: 3/16 thru 5/8 inch inclusive
Input Voltage Requirements at Maximum Rated Outputs:
Voltage 230 / 460 / 575 VAC
Fusing (Stud) 200 / 100 / 80 Amps

Input power Three Phase 230, 460, 575 Volts Alternating Current
Welding Process Type Shielded Metal Arc (SMAW)
Max Open-circuit Voltage 70 Volts Direct Current (72 OCV)
Amperage Range STUD\ 300 - 1200 ADC Stepless Adjustment

Weld Time 100 - 800 Milliseconds Adjustable

TRU-WELD DIVISION
TFPCORP

Tru-Weld Division
460 LAKE RD. MEDINA, OH 44256 U.S.A.
(800) 321-5588 (330) 725-7741
Fax: (330) 725-0161



TRU-WELD
A Division of TFP Corp.

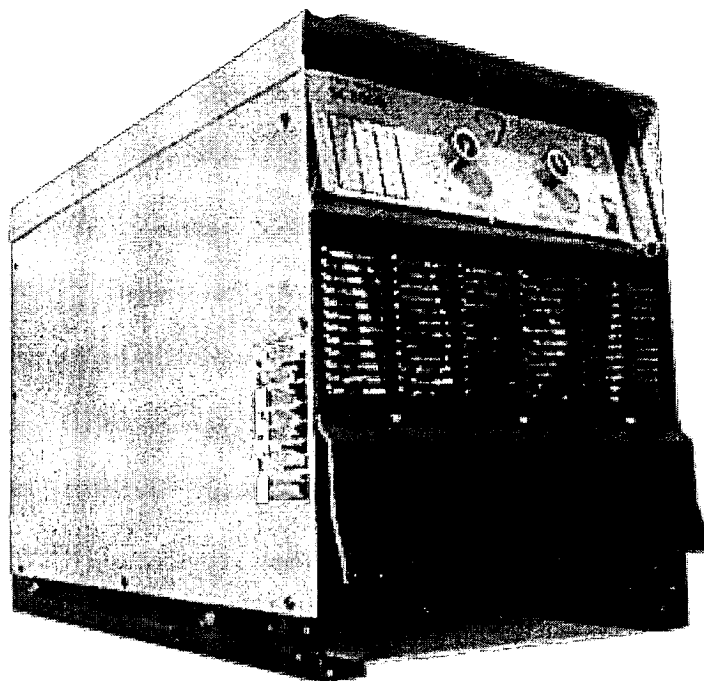
QUALITY WELD STUDS
SINCE 1959

SC-2000 Solid State Stud Welding System

- *Direct Current/Constant Current Output
- *Stepless Control and Current Adjustments



System comes complete with Solid State Power Supply, 4'0 ground cable, control/weld cable, Heavy Duty HD-35 Stud Gun AND initial set-up accessories (Chuck, Foot/Grip)



MACHINE SPECIFICATIONS

Dimensions 27-1/4"H X 22-1/4"W X 35-3/4"D (520lbs NET)
Rated Weld Output: Stud Mode - 2000 Amperes 44 volts @ 20% Duty Cycle

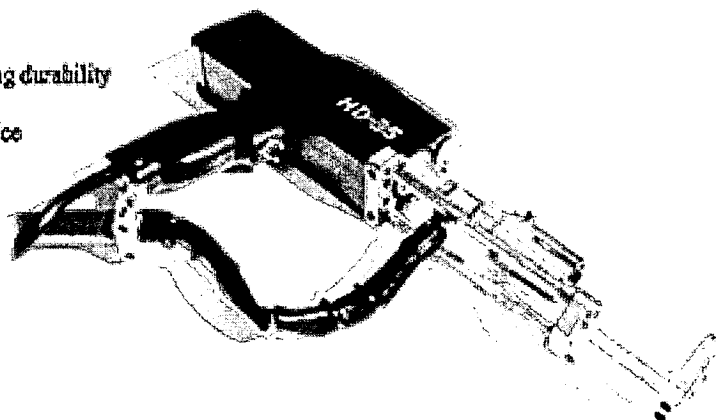
Stud Capacity: 1/4" thru 1"
Input Voltage Requirements at Maximum Rated Outputs:
Voltage: 230/380/460/575 VAC 3 Phase
Fusing: 400/233/200/160 AMPS
Freq: 50/60hz
Duty Cycle: 1" 8 per minute / 3/4" or smaller unlimited

HD-35

- *Quick Cam release for adjustment of legs
- *Quick Adjustment thumb wheel for lift adjustments
- *Fully adjustable Dampener with quick adjustment thumb wheel

MORE FEATURES THAT SET THE HD-35 APART FROM THE COMPETITION

- *Fully adjustable Plunge Speed
- *Linear Ball Bushings controlling Lift Operations for long lasting durability
- *Hardened Steel wear parts for long tool life
- *Encapsulated one piece trigger mechanism for dependable service
- *Rugged Two piece Delron construction for simple service
- *Tri-Ball Clutch compensating lift **BUILT TO LAST**
- *Interchangeable accessories from other makes of stud guns
- *Heavy Lift Capability over 10lbs for shooting Big/Long Studs



TRU-WELD DIVISION
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Tru-Weld Division
460 LAKE RD. MEDINA, OH 44256 U.S.A.
(800) 321-5588 (330) 725-7741
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TRU-WELD
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QUALITY WELD STUDS
SINCE 1959



*

STUD DIAMETER
IN 16THS OF AN INCH

MATERIAL

LOAD STYLE

STUD TYPE

EXAMPLE: SHEAR CONNECTOR

BALL LOADED

MAT'L: 1015

DIA.: 3/4

B/W: 4 3/16

*

PART NUMBER EXTENSION FOR STUDS
THAT HAVE THREADED EXTENSIONS.
APPLIES TO COLLAR STUDS, SHOULDER
STUDS, IT STUDS AND STACK STUDS.

*

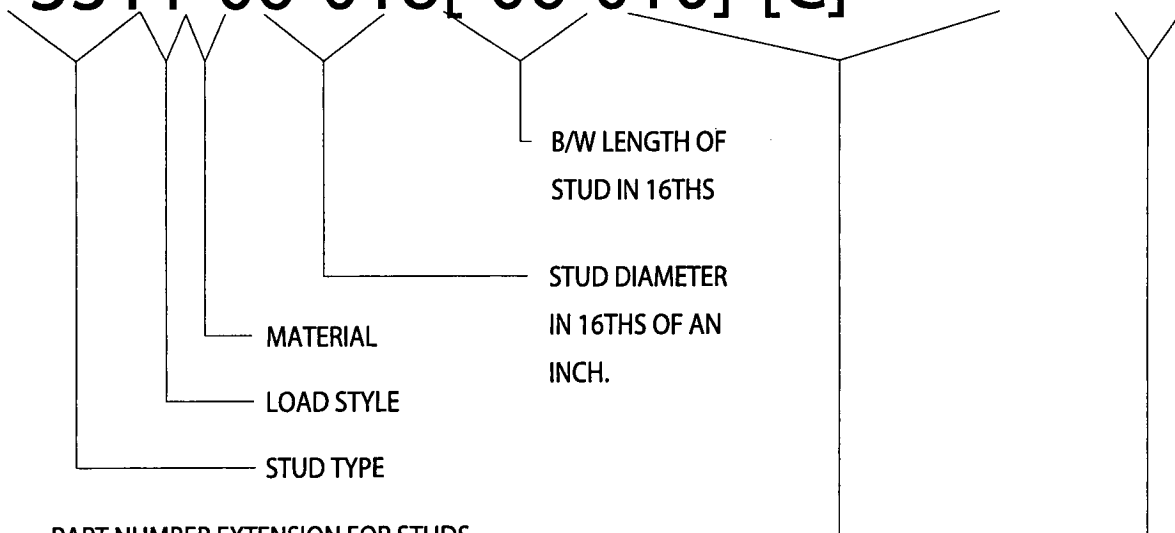
STUD TYPE 10-SHEAR CONNECTOR 11-CONCRETE ANCHOR 12-DEFORMED BAR ANCHOR 13-TP STUD 14-TT STUD 15-CD FLANGED 16-CD NON FLANGED 20-TR STUD 30-SHOULDER STUD 31-STACK STUD 32-IT STUD 33-COLLAR STUD	DIA.: 3/4 B/W: 4 3/16 * PART NUMBER EXTENSION FOR STUDS THAT HAVE THREADED EXTENSIONS. APPLIES TO COLLAR STUDS, SHOULDER STUDS, IT STUDS AND STACK STUDS.	
	*	
	LOAD STYLE 0 - NO LOAD 1 - BALL LOAD	MATERIAL 1 - 1010-1015-1017-1020 2 - 302 S.S. 3 - ALUMINUM 4 - 304 S.S. 6 - 316 S.S. 8 - 1018 9 - 430 S.S.



TRU-WELD Stud Welding

TRU-WELD PART NUMBERS

3311-06-018[-06-010]-[C]



PART NUMBER EXTENSION FOR STUDS THAT HAVE THREADED EXTENSIONS. APPLIES TO COLLAR STUDS, SHOULDER STUDS, INTERNALLY THREADED STUDS AND STACK STUDS. FIRST TWO DIGITS ARE THE NOMINAL THREAD DIAMETER IN 16THS. THE LAST THREE ARE THE THREAD LENGTH IN 16THS.

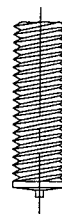
LAST DIGIT TO BE USED FOR THREADED STUDS ONLY. THIS DIGIT CAN BE EITHER "C" OR "F" TO DESIGNATE TYPE OF THREADS. "C"= UNC (COURSE) AND "F"= UNF (FINE).

EXAMPLE: COLLAR STUD

BALL LOADED
MAT'L: 1015
DIA.: 3/8
B/W: 1-1/8
THREAD DIA.: 3/8
THD. EXT.: 5/8
THD. PITCH: 16



TRU-WELD Stud Welding



MATERIAL CAPABILITIES AND CAPACITIES FOR CD STUD WELDING

WELDING CAPABILITIES

BASE MATERIAL	STUD MATERIAL			
	MILD STEEL: 1010 THROUGH 1030	STAINLESS STEEL 302,304,305	ALUMINUM 1100,5086,6061	BRASS 70-30,65-35
MILD STEEL: 1006 THROUGH 1030	EXCELLENT	EXCELLENT	_____	EXCELLENT
MEDIUM CARBON STEEL: 1030 THROUGH 1050	GOOD *	GOOD *	_____	GOOD *
GALVANIZED SHEET DUCT: OR DECKING	EXCELLENT	EXCELLENT	_____	_____
STRUCTURAL STEEL	EXCELLENT	EXCELLENT	_____	EXCELLENT
STAINLESS STEEL: 405,410,430, AND 300 SERIES, EXCEPT 303	EXCELLENT	EXCELLENT	_____	EXCELLENT
LEAD-FREE BRASS;ELECTROLYTIC COPPER;LEAD-FREE ROLLED COPPER	EXCELLENT	EXCELLENT	_____	EXCELLENT
+MOST ALUMINUM ALLOYS OF THE 1000,3000,5000,AND 6000 SERIES	_____	_____	EXCELLENT	_____
DIE-CAST ZINC ALLOYS	GOOD *	GOOD *	EXCELLENT	GOOD *

*GOOD:GENERALLY FULL STRENGTH RESULTS, DEPENDING UPON THE COMBINATION OF STUD SIZE AND BASE METAL.

+OTHER MATERIALS, SUCH AS 7000 SERIES ALUMINUM, TITANIUM ALLOYS, INCONEL, ETC. CAN BE WELDED UNDER SPECIFIED CONDITIONS.

STANDARD LOAD CAPACITIES

STUD MATERIAL	STUD SIZE	MAXIMUM FASTENING TORQUE (INCH LBS) *	ULTIMATE TENSILE LOAD (LBS)	MAXIMUM SHEAR LOAD (LBS)
LOW-CARBON COPPER-FLASHED STEEL	6-32	6	500	375
	8-32	12	765	575
	10-24	14	960	720
	1/4-20	43	1,750	1,300
	5/16-18	72	2,900	2,200
	3/8-16	106	4,300	3,250
STAINLESS STEEL: 304	6-32	10	790	590
	8-32	20	1,260	940
	10-24	23	1,530	1,150
	1/4-20	75	2,880	2,160
	5/16-18	126	3,750	5,350
	3/8-16	186	4,850	7,150
ALUMINUM ALLOY: 1100	6-32	2.5	200	125
	8-32	5	295	185
	10-24	6.5	380	235
	1/4-20	21.5	670	415
	5/16-18	36	1,125	695
	3/8-16	53	1,660	1,000
ALUMINUM ALLOY: 5086	6-32	3.5	375	235
	8-32	7.5	585	365
	10-24	10	735	460
	1/4-20	32.5	1,360	850
	5/16-18	54.5	2,300	1,400
	3/8-16	81	3,400	2,100
BRASS: 70-30,65-35	6-32	8	600	390
	8-32	16	860	560
	10-24	18.5	1,040	680
	1/4-20	61	1,950	1,275
	5/16-18	102	3,280	2,140
	3/8-16	150	4,800	3,160

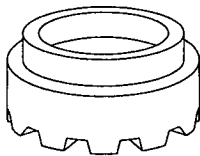
*THESE VALUES SHOULD DEVELOP FASTENER TENSION TO SLIGHTLY LESS THAN YIELD POINT.



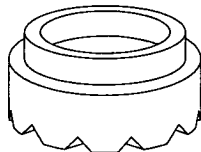
TRU-WELD *Stud Welding*

STANDARD FERRULES

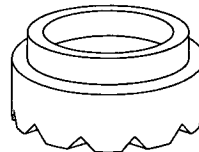
SUPPLIED WITH TRU-WELD STUDS



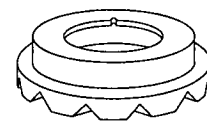
DDFG



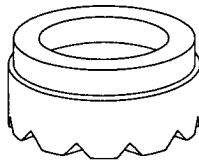
F 1*



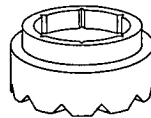
FHD



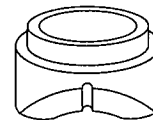
C



P



R



A 2*

THE TRU-WELD FERRULE (ARC SHIELD) IS SPECIALLY DESIGNED OF BALL CLAY AND TALC, AN EXCELLENT MATERIAL TO WITHSTAND HEAT SHOCK AS WELL AS REASONABLY HIGH TEMPERATURE WITHOUT MELTING OR BREAKING. THE TRU-WELD FERRULE COMPLEMENTS THE PERFECT-POSITION ARC INITIATOR AND THE UNIFORM FLUX LOAD TO EFFECT A TOP-QUALITY WELD. SPECIAL FERRULES ARE AVAILABLE ON REQUEST.

1* THE "F" FERRULE IS ALSO AVAILABLE IN LOW PROFILE VERSIONS.

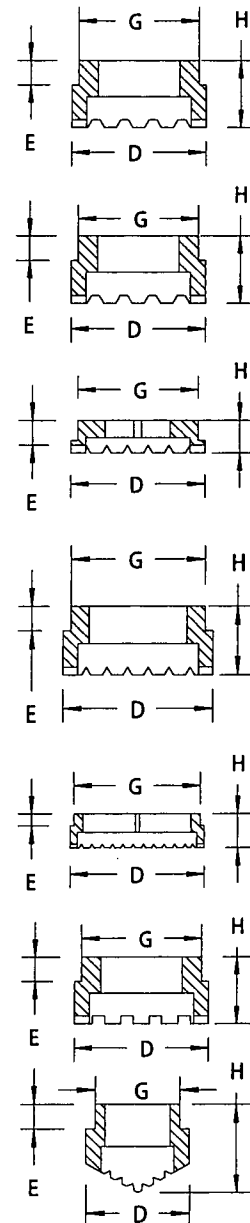
2* THE A FERRULE PICTURED IS THE COMBINATION INSIDE-OUTSIDE ANGLE FERRULE. THE INSIDE ONLY AND OUTSIDE ONLY FERRULES ARE ALSO STANDARD STOCK ITEMS.



TRU-WELD Stud Welding

STANDARD FERRULES

SUPPLIED WITH TRU-WELD STUDS					
TYPE	NOMINAL SIZE	D	H	G	E
F	3/16	.390	.390 OR .250	.281	.156
	1/4	.455	.390 OR .250	.380	.156
	5/16	.578	.390	.445	.156
	7/16	.703	.422	.585	.188
	3/4	1.218	.656	1.030	.188
	7/8	1.406	.732	1.210	.188
	1"	1.610	.820	1.406	.188
F HD	1/4	.645	.390	.515	.150
	3/8	.800	.400	.645	.150
	1/2	.875	.455	.785	.185
	5/8	1.230	.520	1.035	.185
C	1/4	.875	.250	.785	.125
	5/16	.875	.250	.785	.125
	3/8	.875	.250	.785	.125
	1/2	1.203	.281	1.045	.156
P	1/4	.455	.250	.380	.125
	5/16	.535	.250	.445	.125
	3/8	.595	.265	.505	.125
	7/16	.675	.329	.585	.156
	1/2	.740	.362	.650	.156
	5/8	.905	.433	.785	.156
	3/4	1.150	.526	1.030	.187
	7/8	1.330	.593	1.203	.187
R	1"	1.526	.661	1.406	.187
	3/8	.595	.250	.505	.125
	7/16	.675	.250	.585	.125
	1/2	.740	.281	.650	.156
	5/8	.875	.281	.785	.156
DDFG	3/4	1.030	.375	.921	.187
	1/2	.800	.450	.645	.185
	5/8	1.015	.525	.775	.185
	3/4	1.335	.600	1.210	.185
A	7/8	1.528	.666	1.406	.200
	1/4	.455	.500	.380	.156
	3/8	.640	.480	.505	.156
	1/2	.795	.688	.650	.188
	5/8	1.030	.875	.785	.188
	3/4	1.218	.875	1.030	.188

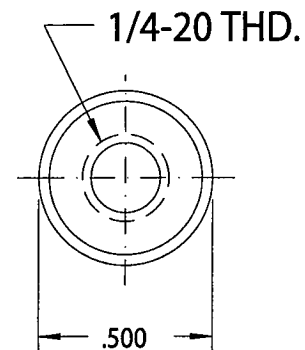
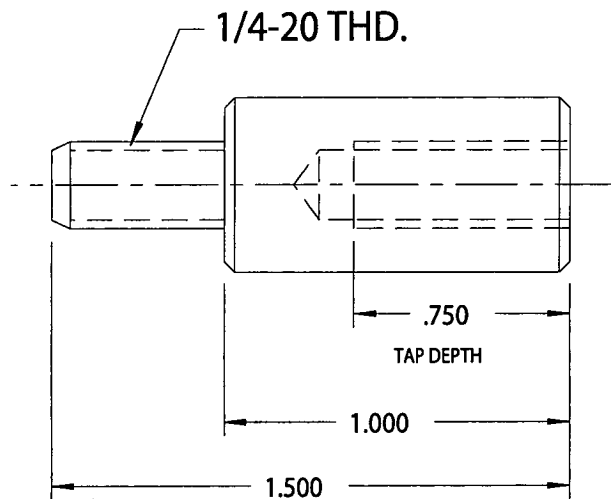




TRU-WELD Stud Welding

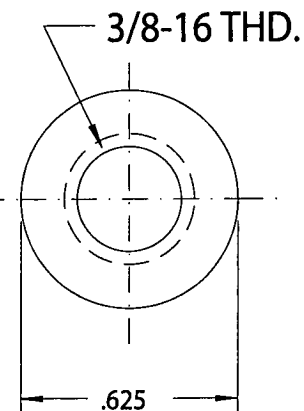
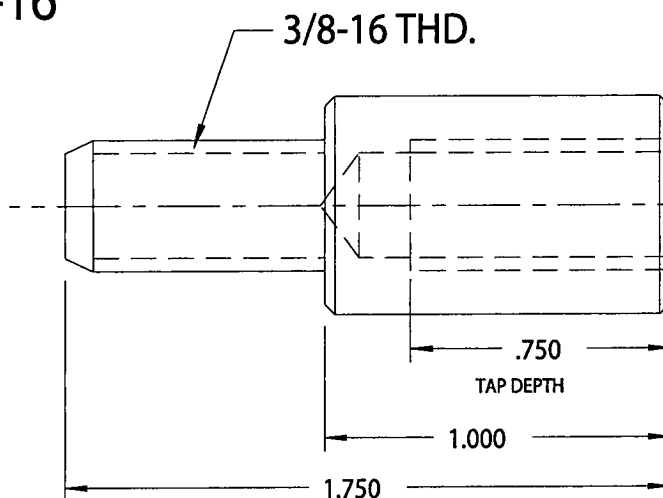
STACK STUDS

1/4-20



P/N - 3101-04-024-04-012C

3/8-16



P/N - 3101-06-028-06-012C

MILD STEEL / STAINLESS STEEL / ALUMINUM

MATERIAL CODE - 1

MATERIAL CODE - 1, 4 OR 6

MATERIAL CODE - 3



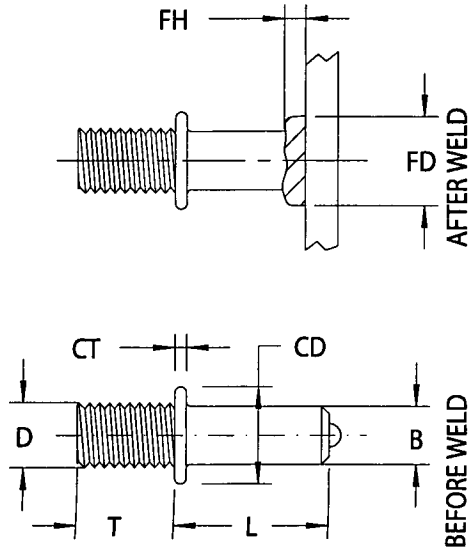
TRU-WELD Stud Welding

TYPE C STUD

THREADED TO COLLAR - PITCH DIA. WELD BASE

TYPE C FERRULE SUPPLIED

(NOTE #3)



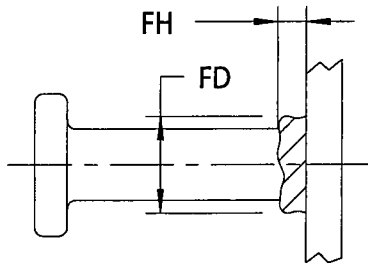
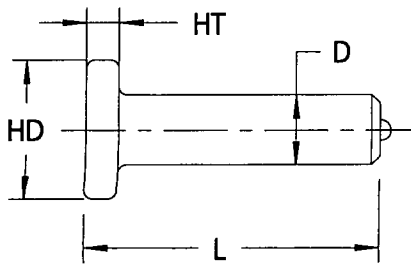
LIGHT DUTY STANDARD				LIGHT DUTY SPLIT		STANDARD COMBINATION	*4
FOOT PART NUMBER	GRIP PART NUMBER	FOOT PART NUMBER	GRIP PART NUMBER	FOOT PART NUMBER	GRIP PART NUMBER		
CHUCK PART NUMBER	FH WELD FILLET HEIGHT	FD WELD FILLET DIAMETER	*2 STUD PART NUMBER	*1 L MIN LENGTH BEFORE WELD	B	T MIN THREAD LENGTH	D THREAD DIAMETER
5018	7/64	23/64	3311-04-008-04-004	1/2	.215	1/4	1/4-20
5019	7/64	7/16	3311-05-008-05-006	1/2	.275	3/8	5/16-18
8026	1/8	1/2	3311-06-008-06-006	1/2	.330	3/8	3/8-16
8027	5/32	11/16	3311-08-009-08-006	9/16	.448	3/8	1/2-13
11122	8016	11122					
11122	8016	11122					
11122	8016	11122					
11122	8017	11125					
8053	8053	8053					
8053	8053	8053					
8054	8054	8054					

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.4

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.



TRU-WELD Stud Welding

TYPE **CA** STUD
 HEADED CONCRETE ANCHOR - FULL WELD BASE
 TYPE **F** FERRULE SUPPLIED

(NOTE #3)

BEFORE WELD		AFTER WELD					LIGHT DUTY SPLIT		STANDARD COMBINATION
D DIAMETER	L ^{*1} MIN LENGTH BEFORE WELD	STUD PART NUMBER	HD ^{*2} HEAD DIAMETER	HT HEAD HEIGHT MIN.	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	FOOT PART NUMBER	
1/4	2-11/16	1111-04-043	1/2	3/16	23/64	7/64	8027	11124	8121
1/4	3-1/8	1111-04-050	1/2	3/16	23/64	7/64	8027	11124	8121
1/4	4-1/8	1111-04-066	1/2	3/16	23/64	7/64	8027	11124	8121

- 1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.
- 2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3
- 3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.
- 4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.



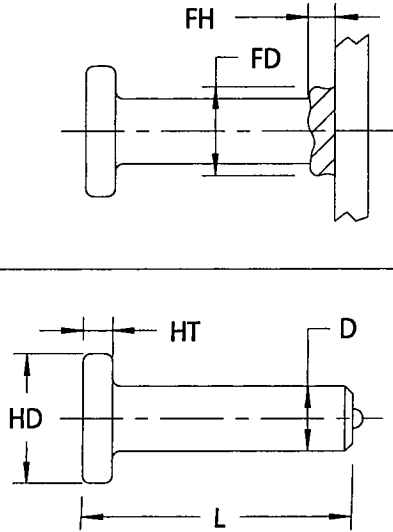
TRU-WELD Stud Welding

TYPE **CA** STUD

HEADED CONCRETE ANCHOR - FULL WELD BASE

TYPE **F** FERRULE SUPPLIED

(NOTE #3)



BEFORE WELD

AFTER WELD

D DIAMETER	L MIN. LENGTH BEFORE WELD	STUD PART NUMBER	*2	HD HEAD DIAMETER	HT HEAD HEIGHT MIN.	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT		STANDARD COMBINATION *4
									FOOT PART NUMBER	GRIP PART NUMBER	
3/8	1-1/4	1111-06-020		3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	1-3/8	1111-06-022		3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	1-5/8	1111-06-026		3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	2-1/8	1111-06-034		3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	2-5/8	1111-06-042		3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	3-1/8	1111-06-050		3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	4-1/8	1111-06-066		3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	5-1/8	1111-06-082		3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	6-1/8	1111-06-098		3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	8-1/8	1111-06-130		3/4	9/32	1/2	1/8	8029	11124	8052	8125

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.



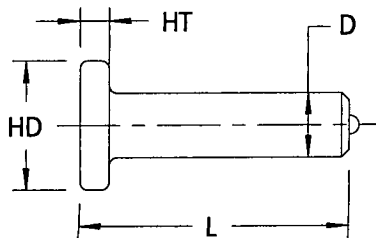
TRU-WELD Stud Welding

TYPE **CA** STUD

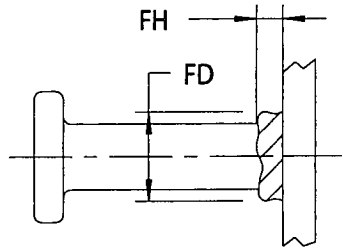
HEADED CONCRETE ANCHOR - FULL WELD BASE

TYPE **F** FERRULE SUPPLIED

(NOTE #3)



BEFORE WELD



AFTER WELD

D DIAMETER	L MIN. LENGTH BEFORE WELD	*1	STUD PART NUMBER	*2	HD HEAD DIAMETER	HT HEAD HEIGHT MIN.	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT		STANDARD COMBINATION *4
										FOOT PART NUMBER	GRIP PART NUMBER	
1/2	1-1/8		1111-08-018		1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	1-1/2		1111-08-024		1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	1-5/8		1111-08-026		1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	2-1/8		1111-08-034		1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	2-5/8		1111-08-042		1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	3-1/8		1111-08-050		1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	4-1/8		1111-08-066		1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	5-5/16		1111-08-085		1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	6-1/8		1111-08-098		1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	8-1/8		1111-08-130		1	5/16	11/16	5/32	8032	11125	8053	8126

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.



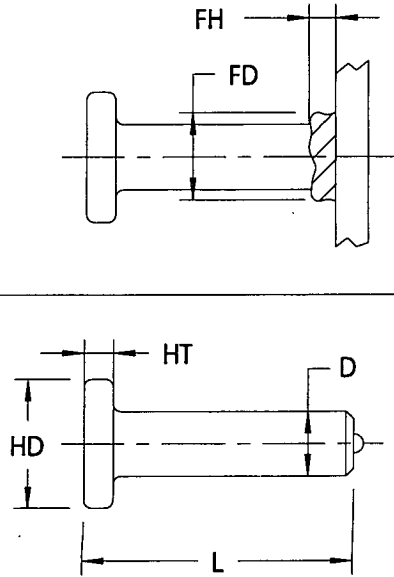
TRU-WELD Stud Welding

TYPE **CA** STUD

HEADED CONCRETE ANCHOR - FULL WELD BASE

TYPE **F** FERRULE SUPPLIED

(NOTE #3)



BEFORE WELD

AFTER WELD

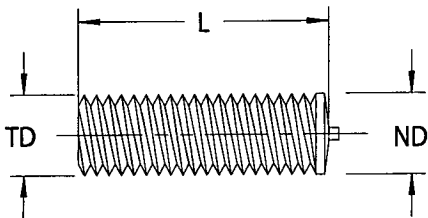
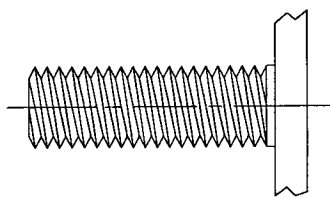

D DIAMETER	L MIN. LENGTH BEFORE WELD	*1	STUD PART NUMBER	*2	HD HEAD DIAMETER	HT HEAD HEIGHT MIN.	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT		STANDARD COMBINATION *4
										FOOT PART NUMBER	GRIP PART NUMBER	
5/8	1-7/16		1111-10-023		1-1/4	5/16	7/8	3/16	8038	11125	8054	FOOT AND PART GRIP 8127
5/8	1-11/16		1111-10-027		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	1-15/16		1111-10-031		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	2-3/16		1111-10-035		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	2-11/16		1111-10-043		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	3-3/16		1111-10-051		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	4-3/16		1111-10-067		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	4-11/16		1111-10-075		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	5-3/16		1111-10-083		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	6-9/16		1111-10-102		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	8-3/16		1111-10-131		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	9-3/16		1111-10-147		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	10-3/16		1111-10-163		1-1/4	5/16	7/8	3/16	8038	11125	8054	8127

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.

						TRU-WELD Stud Welding TYPE CD STUD FULLY THREADED - NON-FLANGED NO FERRULE NEEDED	
BEFORE WELD		AFTER WELD					
TD DIAMETER AND THREAD	L MIN. LENGTH BEFORE WELD	*1 STUD PART NUMBER	*2 ND NOMINAL DIAMETER	CHUCK PART NUMBER			
#4-40	.250	1641-18-004C	.112	5012			
#6-32	.250	1641-22-004C	.138	5014			
#8-32	.250	1641-26-004C	.164	5015			
#10-32	.250	1641-03-004F	.190	5016			
#10-24	.250	1641-03-004C	.190	5016			
1/4-20	.375	1641-04-006C	.250	5017			
5/16-18	.500	1641-05-008C	.312	5018			
3/8-16	.500	1641-06-008C	.375	5019			
C.D. STUDS ARE AVAILABLE IN MILD STEEL, STAINLESS STEEL, ALUMINUM, AND BRASS. MILD STEEL STUDS ARE COPPER PLATED AND ARE ALSO AVAILABLE NICKEL PLATED UPON REQUEST. ALL STUDS ARE ANNEALED WHERE REQUIRED.							
1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM. 2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3							

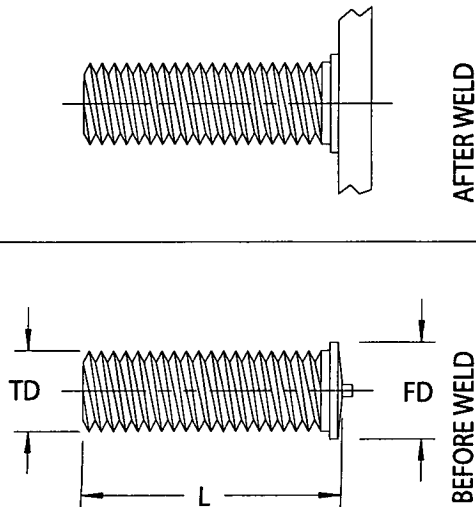


TRU-WELD Stud Welding

TYPE CD STUD

FULLY THREADED - FLANGED

NO FERRULE NEEDED



TD DIAMETER AND THREAD	L MIN LENGTH BEFORE WELD	*1	STUD PART NUMBER	*2	FD FLANGE DIAMETER	CHUCK PART NUMBER
#4-40	.250		1541-18-004C		.187	5012
#6-32	.250		1541-22-004C		.220	5014
#8-32	.250		1541-26-004C		.250	5015
#10-32	.250		1541-03-004F		.250	5016
#10-24	.250		1541-03-004C		.250	5016
1/4-20	.375		1541-04-006C		.312	5017
5/16-18	.500		1541-05-008C		.375	5018

C.D. STUDS ARE AVAILABLE IN MILD STEEL, STAINLESS STEEL, ALUMINUM, AND BRASS.
MILD STEEL STUDS ARE COPPER PLATED AND ARE ALSO AVAILABLE NICKEL PLATED UPON REQUEST.
ALL STUDS ARE ANNEALED WHERE REQUIRED.

- 1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.
- 2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

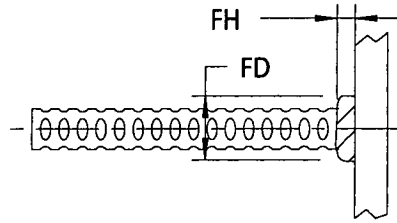
CONFORMS TO MIL-S-24149(SHIPS)



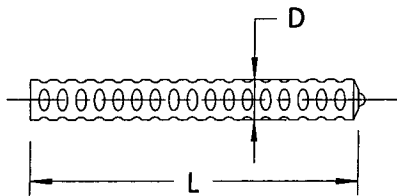
TRU-WELD Stud Welding

TYPE DB STUD
(DEFORMED BAR ANCHOR)
NO THREAD - FULL WELD BASE
TYPE F FERRULE SUPPLIED

(NOTE #3)



AFTER WELD



BEFORE WELD

D DIAMETER	L MIN. LENGTH BEFORE WELD	L *1	STUD PART NUMBER	*2	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT		STANDARD COMBINATION *4
								FOOT PART NUMBER	GRIP PART NUMBER	
3/8	10-1/8		1211-06-162		1/2	1/8	5019	11124	8052	8125
1/2	12-1/8		1211-08-194		11/16	5/32	8027	11125	8053	8125
5/8	12-3/16		1211-10-195		7/8	3/16	8028	11125	8054	8127
3/4	12-3/16		1211-12-195		1-1/16	1/4	8029	11125	8054	8127

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM UP TO 48".

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

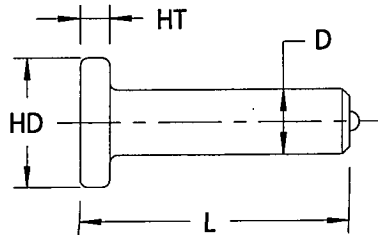
4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.



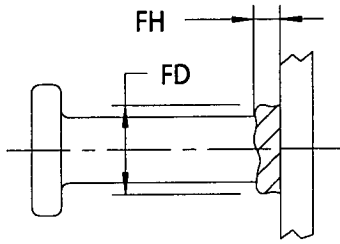
TRU-WELD Stud Welding

TYPE DSC STUD
SHEAR CONNECTOR - FULL WELD BASE
TYPE TD FERRULE SUPPLIED
(FOR THRU-DECK WELDING)

(NOTE #3)



BEFORE WELD



AFTER WELD

D DIAMETER	L MIN. LENGTH BEFORE WELD	*1	STUD PART NUMBER	*2	HD HEAD DIAMETER	HT HEAD HEIGHT MIN.	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT		STANDARD COMBINATION *4
										FOOT PART NUMBER	GRIP PART NUMBER	
3/4	3-3/8		2311-12-054		1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116
3/4	3-7/8		2311-12-062		1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116
3/4	4-3/8		2311-12-070		1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116
3/4	4-7/8		2311-12-078		1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116
3/4	5-3/8		2311-12-086		1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116
3/4	5-7/8		2311-12-094		1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.



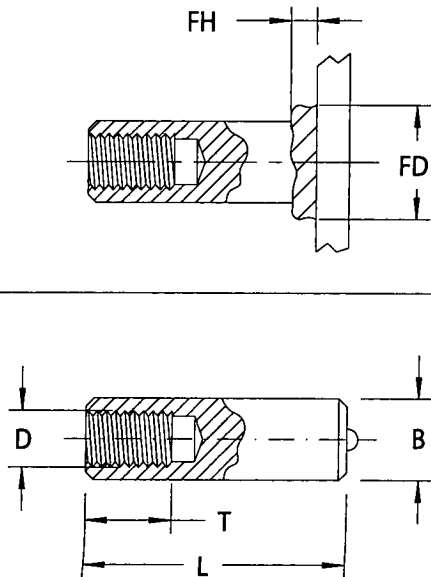
TRU-WELD Stud Welding

TYPE **IT** STUD

TAPPED - FULL WELD BASE

TYPE **F** FERRULE SUPPLIED

(NOTE #3)



BEFORE WELD				AFTER WELD				LIGHT DUTY STANDARD				LIGHT DUTY SPLIT		STANDARD COMBINATION	*4
B	D	L	*1	*2	T	FD	FH	CHUCK PART NUMBER	FOOT PART NUMBER	GRIP PART NUMBER	FOOT PART NUMBER	GRIP PART NUMBER	FOOT PART NUMBER	GRIP PART NUMBER	
1/4	#8-32	5/8	3211-04-010-25-004		1/4	23/64	7/64	5017	11121	8011	11124	8024	11124	8024	8121
5/16	#10-24	5/8	3211-05-010-03-005		5/16	7/16	7/64	5018	11121	8012	11124	8025	11124	8025	8122
3/8	1/4-20	13/16	3211-06-013-04-006		3/8	1/2	1/8	5019	11121	8015	11124	8052	11124	8052	8125
7/16	5/16-18	1	3211-08-016-05-008		1/2	19/32	9/64	8026	11121	8014	11124	8051	11124	8051	8124
1/2	3/8-16	1-1/8	3211-08-018-06-009		9/16	11/16	5/32	8027	11124	8016	11125	8053	11125	8053	8126
5/8	7/16-14	1-3/16	3211-10-019-07-010		5/8	7/8	3/16	8028	11124	8017	11125	8054	11125	8054	8127
3/4	1/2-13	1-7/16	3211-12-023-08-012		3/4	1-1/16	1/4	8029	11124	8017	11125	8054	11125	8054	8127
7/8	5/8-11	1-5/8	3211-14-026-10-018		15/16	1-1/8	5/16	8030	11123	8018	11126	8055	11126	8055	8128
1	3/4-10	2-1/4	3211-16-036-12-022		1-1/8	1-3/8	3/8	8032	11123	8019	11126	8056	11126	8056	8129

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

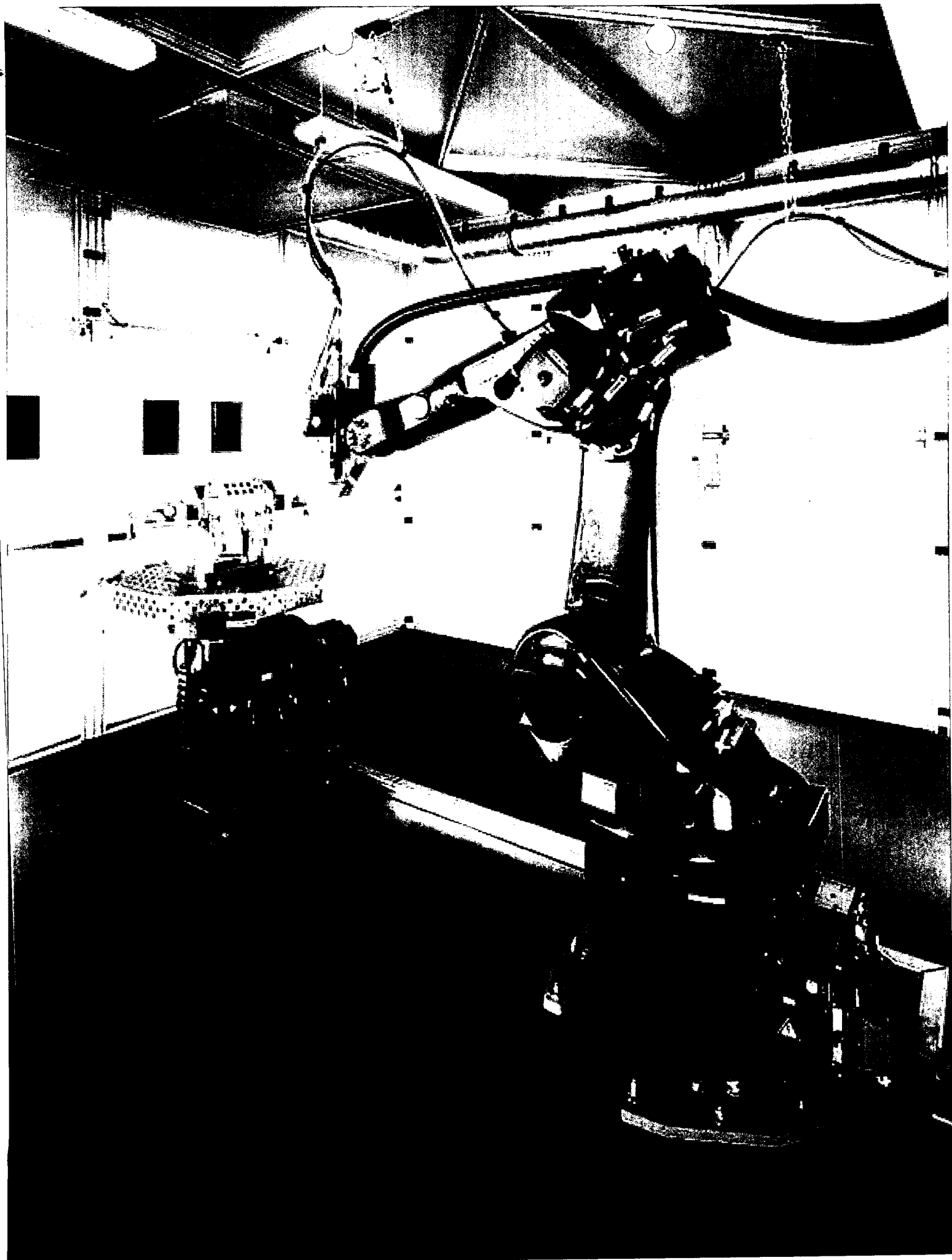
2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.4

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.

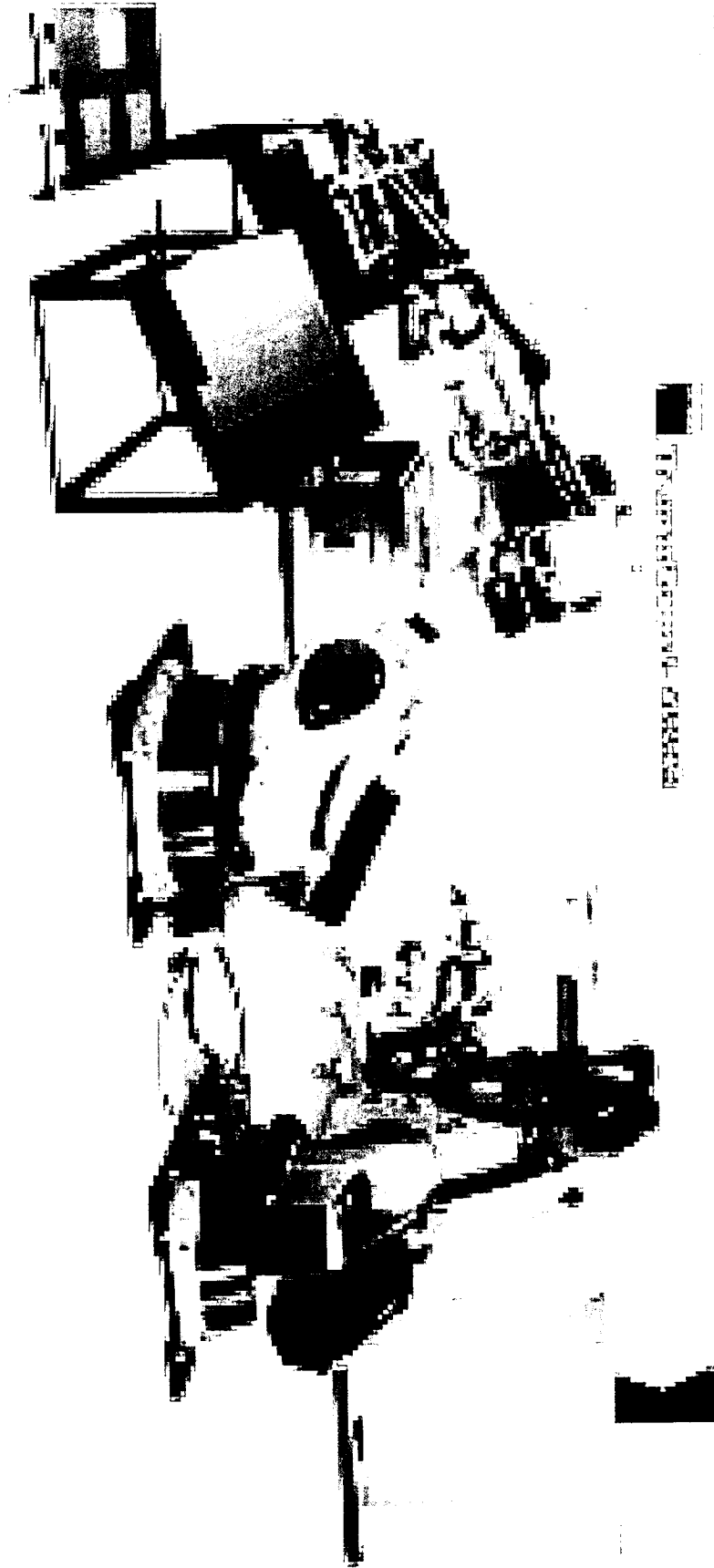
CONFORMS TO MIL-5-24149(SHIPS)

APPENDIX B



PowerWeb T-100





1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

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Judith A. Trantolo